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A NEW SQUIRREL FROM COSTA RICA

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SQUIRRELS of the *Sciurus adolphei* group from Costa Rica present an extraordinary variability of color phase. Further investigation is needed to establish the ranges of several recognizable forms and the presence of intergrades. E. W. Nelson[1] considered *Sciurus adolphei dorsalis* (Gray)[2] to have two color phases, namely: a blackish-backed phase and a grizzled-backed phase. Additional material besides that available to Nelson indicates that as these two forms have distinct geographic ranges they are geographical races rather than color phases. The blackish-backed race, *Sciurus a. dorsalis* (Gray), occurs in the Pacific lowlands and is represented by specimens from Liberia, LaCruz, El Pelon, and Miravalles. The type locality of this form has been fixed by Nelson as Liberia, Costa Rica. The grizzled-backed phase occurs in the mountains of the Cordillera range as indicated by specimens from Alajuela and La Carpintera. This race should be known as *Sciurus a. rigidus* (Peters),[3] of which the type locality is San José. Intergradation between *dorsalis* and *rigidus* is indicated by specimens from Liberia and Miravalles.

[1] *Proc. Wash. Acad. Sci.*, Vol. 1, pp. 74–76. 1899.
[2] *P. Z. S.*, p. 138. 1848.
[3] *Monatsber K. Pr. Akad. Wiss.* Berlin, pp. 652–653. 1863.

Macroxus nicoyana (Gray)[4] 1867 was described from five specimens said to have come from Nicoya, but these skins probably came from some other locality. A specimen (U. S. N. M. No. 11419) from the west coast of Central America was sent to the British Museum by Nelson and said by Oldfield Thomas to be like the type of *nicoyana.* Gray's description of *nicoyana* well describes this specimen, which is very much like *rigidus* as represented by specimens from Alajuela and La Carpintera. It is not at all like specimens from the Nicoya Peninsula taken at Tambor and Oja Ancha. It therefore seems likely that the type of *nicoyana* did not come from the Nicoya Peninsula. The name *nicoyana,* apparently, cannot be used for any race occupying the Nicoya Peninsula and must be considered a synonym of *rigidus,* until more material is available. The name *Sciurus intermedius* (Gray) 1867 is a synonym of *rigidus* 1863. Oldfield Thomas compared a specimen (U. S. N. M. No. 15757) from Alajuela and found it to be identical with Gray's type of *intermedius.* This specimen is also well within the variability of *rigidus.*

Five specimens from Tambor, Costa Rica, recently collected by Austin Smith, are readily distinguishable from other forms of the *adolphei* group.

Sciurus adolphei atrirufus, subsp. nov.

Type.—Adult male (skin and skull) No. 59842, University of Michigan, Museum of Zoology. Collected November 28, 1928, by Austin Smith at Tambor on the Nicoya Peninsula, Costa Rica. Tambor is a settlement at sea-level on the Bay of Ballena on the southeast extremity of the Nicoya Peninsula. Besides the type there are four paratypes from the same locality.

Diagnosis.—Broad band of black on back. Underparts rufous extending well up to the side. No trace of lateral stripes. Only a few white hairs on the throat and axilla but no definite white ventral patches as in *rigidus.*

[4] *Ann. & Mag. Nat. Hist.* 3rd ser., xx, p. 423. 1867.

Color of type.—Top of head cinnamon-rufous. Ears cinnamon-rufous bordered with black. Sides of head more yellowish; hairs tipped with black. Postauricular patches cinnamon-rufous. Black stripes over eyes, widening behind eyes and meeting between the ears and thence extending in one broad band down the back, widening behind the postauricular patches, narrow over the shoulders, broadening on the lumbar region, and tapering thence to the tail. Hairs of back black with a few hairs between the shoulders, rump, and sides with cinnamon-rufous sub-terminal band. Hairs on sides black at base. Underparts, feet, legs, flanks, and sides uniform cinnamon-rufous. Tail above black heavily washed with white, hairs black with long white tips. Tail below with median cinnamon-rufous band to end of vertebrae bordered with black and edged with white. Hairs cinnamon-rufous with broad sub-terminal band of black tipped with yellowish white.

The color of the underparts of the four paratypes are: one chestnut, one hazel, one kaiser brown, and one cinnamon-rufous like the type.

Measurements.—(Type and four paratypes) length 560 mm, (505–570 mm.); tail, 275 (258–292 mm.); hind foot to end of claw, 63 (60–62 mm.). Skull: condylo-premaxillary length 56.3 mm.; zygomatic breadth, 34.9 mm.; anterior end of premaxillary to palatal notch, 32.5 mm.; interorbital breadth 21.5 mm.

Remarks.—This form was described by Gray[5] under *Macroxus dorsalis* as variety No. 6 but was not named. A series of four specimens from Oja Ancha on the Nicoya Peninsula seem to show intergradation toward *rigidus* and *dorsalis,* the underparts and forehead being colored like *atrirufus* while the back is grizzled gray.

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[5] *Ann. & Mag. Nat. Hist.* 3rd ser., xx, p. 423. 1867.

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